

t20_msscyc_1 (TMGmpGitHxvtb- JFb6XryggpNhYm1CARZdDk)

October 27, 2020

Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v11_struct_0 : \iota \Rightarrow o$ be given. Let $l1_msualg_1 : \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v2_relat_1 : \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_dtconstr : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_msafree : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_trees_3 : \iota \Rightarrow \iota$ be given. Let $k1_msaterm : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_zfmisc_1 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u4_struct_0 : \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_msafree : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_trees_4 : \iota \Rightarrow \iota$ be given. Let $v1_finset_1 : \iota \Rightarrow o$ be given. Let $v3_trees_2 : \iota \Rightarrow o$ be given. Let $k2_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Let $k7_msaterm : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_dtconstr : \iota \Rightarrow \iota$ be given. Let $k2_msualg_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge (l1_msualg_1 \\ & X0))) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge ((v2_relat_1 X1) \wedge ((v4_relat_1 \\ & X1 (u1_struct_0 X0)) \wedge ((v1_funct_1 X1) \wedge (v1_partfun1 X1 (u1_struct_0 \\ & X0)))))) \Rightarrow (\forall X2.(m1_dtconstr X2 (u1_struct_0 (k5_msafree \\ & X0 X1)) (k5_trees_3 (u1_struct_0 (k5_msafree X0 X1))) (k1_msaterm \\ & X0 X1)) \Rightarrow (\exists X3.(m1_subset_1 X3 (u1_struct_0 X0)) \wedge (X2 \in k7_msafree \\ & X0 X1 X3)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_relat_1 (k1_trees_4 X0)) \wedge ((v1_zfmisc_1 (k1_trees_4 \\ & X0)) \wedge ((v1_funct_1 (k1_trees_4 X0)) \wedge ((v1_finset_1 (k1_trees_4 \\ & X0)) \wedge (v3_trees_2 (k1_trees_4 X0)))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. k4_tarski X0 X1 = k2_tarski (k2_tarski X0 \\ & X1) (k1_tarski X0) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge (l1_msualg_1 \\
& X0))) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge ((v2_relat_1 X1) \wedge ((v4_relat_1 \\
& X1 (u1_struct_0 X0)) \wedge ((v1_funct_1 X1) \wedge (v1_partfun1 X1 (u1_struct_0 \\
& X0)))))) \Rightarrow (\forall X2.(m1_dtconstr X2 (u1_struct_0 (k5_msafree \\
& X0 X1)) (k5_trees_3 (u1_struct_0 (k5_msafree X0 X1))) (k1_msaterm \\
& X0 X1)) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow ((X3 = k7_msaterm \\
& X0 X1 X2) \Leftrightarrow (X2 \in k7_msafree X0 X1 X3))))))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge (l1_msualg_1 \\
& X0))) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge ((v2_relat_1 X1) \wedge ((v4_relat_1 \\
& X1 (u1_struct_0 X0)) \wedge ((v1_funct_1 X1) \wedge (v1_partfun1 X1 (u1_struct_0 \\
& X0)))))) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (k7_msafree \\
& X0 X1 X2 = ReplSep (toset (\lambda X3 : \iota.m1_dtconstr X3 (u1_struct_0 \\
& (k5_msafree X0 X1)) (k5_trees_3 (u1_struct_0 (k5_msafree X0 X1))) \\
& (k4_dtconstr (k5_msafree X0 X1)))) (\lambda X3 : \iota.\neg(\forall X4. \\
& \neg(X4 \in k1_funct_1 X1 X2) \wedge (X3 = k1_trees_4 (k4_tarski X4 X2))) \wedge (\forall X4. \\
& (m1_subset_1 X4 (u4_struct_0 X0)) \Rightarrow (\neg(k4_tarski X4 (u1_struct_0 \\
& X0) = k1_funct_1 X3 k1_xboole_0) \wedge (k2_msualg_1 X0 X4 = X2)))) (\lambda X3 : \\
& \iota.X3))))))
\end{aligned} \tag{5}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge (l1_msualg_1 \\
& X0))) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge ((v2_relat_1 X1) \wedge ((v4_relat_1 \\
& X1 (u1_struct_0 X0)) \wedge ((v1_funct_1 X1) \wedge (v1_partfun1 X1 (u1_struct_0 \\
& X0)))))) \Rightarrow (\forall X2.(m1_dtconstr X2 (u1_struct_0 (k5_msafree \\
& X0 X1)) (k5_trees_3 (u1_struct_0 (k5_msafree X0 X1))) (k1_msaterm \\
& X0 X1)) \Rightarrow (\neg(\neg v1_zfmisc_1 X2) \wedge (\forall X3.(m1_subset_1 X3 (u4_struct_0 \\
& X0)) \Rightarrow (k1_funct_1 X2 k1_xboole_0 \neq k4_tarski X3 (u1_struct_0 X0))))))
\end{aligned}$$